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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,526	11/13/2001	David M. Kaufman	D2551	9367

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EXAMINER

SHANG, ANNAN Q

ART UNIT PAPER NUMBER

2623

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,526

Applicant(s)

KAUFMAN, DAVID M.

Examiner

Annan Q. Shang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-10,13-16 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-10,13-16 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-10, 13-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Pavlic et al (5,130,664)** in view of **Crane (4,731,614)**.

As to claims 1-3, note the **Pavlic** reference figure 1 discloses one GHz CATV repeater system and further discloses a directional coupler system comprising:

An input diplex filter or first splitting means (Input DF-14 of Trunk Section 'TS' 11) for splitting signal into a high band signal (Highpass Filter 14a or H) and a low band signal (Lowpass Filter 14b or L, fig.1 and col.3, lines 32-53);

A high band directional coupler or a first directional coupler (HBDC-20), where the high band signal is coupled to an input of the high band directional coupler (col.4, lines 12-42);

A low band directional coupler or second directional coupler (LBDC-36), where the low band signal is coupled to an input of the low band directional coupler and arranged in a band splitting scheme (col.5, line 2-6);

A tap diplex filter (DF-14 of Distributor 'D' 12, col.3, lines 32-36) coupled to a tap (D-12) of each of the high band directional coupler and the low band directional coupler (col.3, lines 44-53 and col.4, lines 30-45) and

An output duplex filter or second splitting means (Output DF-14 of TS-11) for receiving and combining a high band signal output from the high band directional coupler and a low band signal output from the low band directional coupler (col.3, line 54-col.4, line 11 and line 30-col.5, line 2).

Pavlic further teaches where the low directional coupler is ferrite transformer technology (col.5, lines 15-38) and further teaches a thick film hybrid circuit board with components, but fails to explicitly teach where the DC has a one octave, operates from 1200-2400 MHz and the High band directional coupler is stripline or microstrip technology.

However, note the **Crane** reference figures 1-3, discloses a distribution network of components, such as directional couplers, conductors, etc., composed of printed lines, stripline, microstrip, etc., where the directional couplers possess a bandwidth of an octave and also achieves broad bandwidths of GHz frequencies (col.5, lines 3-16 and col.6, lines 20-39).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Crane into the system of Pavlic to reduce circuit complexity and weight and further coupled directional couplers together to achieve a broad bandwidths of frequencies.

As to claim 6, Pavlic further discloses where the low band signal is operated from 5-1000 MHz (col.3, lines 49-53).

As to claim 7, Pavlic further discloses where the input diplex filter, the tap filter and the output diplex filter are lumped component bandsplitting filters (col.3, lines 44-53, col.4, line 30-col.5, line 14).

As to claims 8-10, the claimed "An improved wideband bandwidth directional coupler..." is composed of the same structural element that were discussed with respect to the rejection of claims 1-3.

Claim 13 is met as previously discussed with respect to claim 6.

Claim 14 is met as previously discussed with respect to claim 7

As to claims 15-16, the claimed "A method for improving wideband bandwidth a coaxial cable transmission system by providing an improved bandwidth directional coupler..." is composed of the same structural element that were discussed with respect to the rejection of claims 1-3.

Claim 19 is met as previously discussed with respect to claim 7.

Response to Arguments

4. Applicant's arguments with respect to claims 1-3, 6-10, 13-16 and 19 have been considered but are moot in view of the new ground(s) of rejection. The amendment to all the independent claims necessitated the new ground(s) of rejection discussed above.

With respect to the rejection of independent claims 1, 8 and 15, and their dependent claims, applicant discusses the disclosure in the individual references, quotes statements in MPEP as to how obviousness is established and argues that,

neither the prior arts of records **Pavlic et al. (5,130,664)** nor **Crane (4,731,614)** taken alone or in combination disclose or suggest the claimed invention and further argues that Crane is not analogous art.

In response, Examiner disagrees. Examiner notes applicant's arguments, however, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In this case Pavlic teaches a one GHz CATV repeater station with a high pass portion 14a of a duplex filter which permits signal range of 50 MHz to 1 GHz while rejecting signals of 5-30 Mhz and a low pass portion 14b or reverse system that provides or passes frequency range of 5 MHz to 30 MHz (col.3, lines 32-53) and further uses three special ferrite core transformers (col.5, line 15-col.6, line 1+). Pavlic is silent to where the High band directional coupler is stripline or microstrip technology, a deficiency in Pavlic which is disclosed in **Crane** reference (figs 1-3), which discloses a distribution network of components, such as directional couplers or a receiver/transmitter, which is composed of printed lines, stripline, microstrip, etc., where the directional couplers possess a bandwidth of an octave and also achieves broad bandwidths of GHz frequencies (col.5, lines 3-16 and col.6, lines 20-39). All references are in the same field of endeavor, i.e., a directional coupler or receiver/transmitter for CATV system, as such the combination is proper and would have been within the knowledge of one of ordinary skill in the art. This office action is made final

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Politi (6,738,611) discloses image rejection sub-harmonic frequency converter realized in microstrip.

Kingswood et al (6,584,303) disclose method and apparatus for automatically identifying a function module in a modular transceiver system.

Kingswood et al (6,449,467) disclose power control of RF signals with booster module.

Hagstrom (5,903,820) discloses radio communications transceiver with integrated filter.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the **Electronic Business Center (EBC)** at **866-217-9197 (toll-free)**. If you would like assistance from a **USPTO Customer Service Representative** or access to the automated information system, call **800-786-9199 (IN USA OR CANADA)** or **571-272-1000**.



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